

REMARKS

In the Office Action dated July 1, 2004, the Examiner: (i) rejects claims 1 – 16 under 35 U.S.C. § 103(a) as being unpatentable over WO 99/64150 in view of Klein *et al.*; and (ii) rejects claims 1 – 16 under 35 U.S.C. § 112, ¶ 2 as being indefinite. Applicants respond to the rejections as follows:

Response to Rejection Under 35 U.S.C. § 103(a)

The Examiner rejects claims 1 – 16 under 35 U.S.C. § 103(a) as being unpatentable over WO 99/64150 (which is alleged to be an equivalent of U.S. Patent No. 6,749,828 “Fukunaga”) in view of Klein *et al.* For at least the reasons provided below, Applicants respectfully submit that Fukunaga and Klein do not either alone or in combination teach, disclose or otherwise suggest the claimed invention, and that even if the cited references when combined were to teach, disclose or otherwise suggest the claimed invention, there would be no motivation to combine those references in order to produce the claimed invention.

First, the Examiner asserts that the only difference between Fukunaga and claim 1 is that Fukunaga does not disclose that the ruthenium is coated on the alumina carrier. Applicants respectfully submit that the pending claims also differ from Fukunaga in other ways, and that the Examiner has failed to identify where Fukunaga discloses the following two additional elements of the claims: (i) “preheating a reactant mixture of hydrocarbons, oxygen and water or water vapor to a preheating temperature”; and (ii) “passing the preheated reactant mixture over a catalyst adiabatically.” Thus, Applicants respectfully submit that the Examiner has failed to meet his burden of establishing a *prima facie* case of obviousness, and were Fukunaga combined with Klein one would not obtain the present invention.

Second, Applicants submit that the Examiner has not pointed to a sufficient motivation to combine the cited references and that no such motivation exists. Klein suggests the pore volume impregnation of materials with an isoelectric point of 6 to 10

wherein at least one of the active components is an anionic salt of a platinum group metal. *See* claim 1 of Klein.

By contrast, Fukunaga discloses cationic Ru salts (RuCl_3 , which is Ru^{3+} and 3Cl^-) for catalyst preparations. More precisely Fukunaga discloses two different catalysts for hydrocarbon reforming: (i) a Ru supported on zirconia catalyst; and (ii) a Zr and Ru supported on an inorganic oxide carrier, preferably alumina. The ruthenium on zirconia catalyst is obtained by combining a solution containing Ru with a zirconia carrier. *See* U.S. Patent No. 6,749,828, column 8, lines 18 – 20 and example 1. The Ru compound that is used is a RuCl_3 , a cationic salt based on Ru^{3+} . Thus, while Fukunaga suggests the use of cationic salts, Klein suggests the use of anionic salts of a platinum group metal, and the cited references teach away from each other.

Further, and contrary to the Examiner's suggestions, Klein does not disclose a "customary method" applicable to the manufacture of any precious metal catalysts. Instead, as a person of ordinary skill would appreciate, it discloses a unique method that is specifically tailored to automotive applications. Therefore, regardless of the content of Fukunaga, a person of ordinary skill would not look to Klein to develop the present invention.

Response to Rejection Under 35 U.S.C. § 112

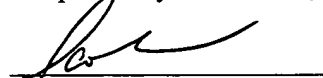
The Examiner rejects claims 1 – 16 as being indefinite. The Examiner has proposed two amendments in order to overcome this rejection. Applicants express no opinion as to the necessity of having to amend claim 1, but in the interest furthering prosecution, have amended claim 1 consistent with the Examiner's proposal. No new matter has been added, and in light of the amendments to claim 1, Applicants respectfully submit that this rejection is moot.

Applicants: Wieland *et al.*
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If any fees are due in addition to the fee for the petition for extension of time, or an overpayment has been made, please charge Deposit Account No. 11-0171 or credit that deposit account for such sum.

If the Examiner has any questions regarding the present application, the Examiner is cordially invited to contact Applicants' attorney at the telephone number provided below.

Respectfully submitted,



Scott D. Locke, Esq.
Registration No.: 44,877
Attorney for Applicant

Kalow & Springut LLP
(212) 813-1600